

Remarks

Status of The Claims

Claims 1, 6, 10, 24, and 29 are currently amended.

Claims 2-5, 12-13, 15-23, 25-28, and 30-33 are canceled.

Claim 34 is new.

Support for claim 34 can be found, for instance, in Examples 7, 8, and 9. With the present amendments, claims 1, 6-11, 14, 24-29, and 34 are currently pending in this application.

Priority

The Examiner points out that the preliminary amendment filed on January 14, 2005 erroneously states that the U.S. provisional application from which the instant application claims priority is U.S. Provisional Application No. 60/396,666. In response, Applicants hereby amend the specification to reflect the correct number for the provisional application, 60/396,665. Support for this amendment is in WO 2004/009761 A2, which is the publication of the PCT application PCT/US03/0221551 for which the instant application is the U.S. national stage.

Response To Claim Objections Under 37 C.F.R. 1.75(c)

The Examiner objects to claims 16-18, 23, and 24 as being of improper dependent form for failing to further limit the subject matter of a previous claim, pursuant to 37 C.F.R. 1.75(c). Claims 16-18 and 23 are canceled. Claim 24 is amended to stand as an independent claims.

The Examiner also objects to claims 6-9 and 14 as encompassing non-elected inventions. In response, Applicants amend independent claim 6 to pertain to elected SEQ ID NO:18.

Response To Rejection Under 35 U.S.C. § 101

The Examiner rejects claims 16-18, 23, and 24 under 35 U.S.C. § 101 because “the claimed invention is directed to non-statutory subject matter.”

Claims 16-18 and 23 are canceled. Claim 24 is currently amended to read “isolated DNA molecule” in lieu of “DNA molecule.”

Response To Rejections Under 35 U.S.C. § 112, ¶ 2 (Indefinite)

The Examiner rejects claims 1-5, 10-13, and 28-33 under the second paragraph of 35 U.S.C. § 112 as being indefinite because claims 1 and 10 recite “substantially identical protein” and because the last steps of claims 1 and 29 are “inconsistent” with their preambles.

In response, Applicants amend claims 1 and 10 to read “at least 98% identical” in lieu of “substantially identical.” Support for “98% identical” is at page 17, lines 28-30. Applicants also amend claims 1 and 29 to recite, consistent with the preamble, that “the expression of said artificial and said known polynucleotides is not silenced.”

Response To Rejection Under 35 U.S.C. § 112, ¶ 1 (Written Description)

Claims 1-5, 10-13, 16-18, 23, and 29-31 are rejected under the first paragraph of 35 U.S.C. § 112 as allegedly failing to comply with the written description requirement. The Examiner states that the specification only teaches artificial polynucleotides encoding EPSP synthases and that “no other artificial polynucleotides encoding proteins that differ from that encoded by the known or original polynucleotide are taught in the specification.”

In view of Applicants’ current amendment to claims 1, 10, and 29 to pertain to SEQ ID NO:18 as well as the cancellation of claims 2-5, 12, 13, 16-18, 28, and 20-33, this rejection is

rendered moot. The claims as pertaining to SEQ ID NO:18 have sufficient support throughout the specification. For instance, see Examples 7, 9, and 11.

Response To Rejection Under 35 U.S.C. § 112, ¶ 1 (Enablement)

Claims 1-5, 10-13, 18, and 29-31 are rejected under the first paragraph of 35 U.S.C. § 112 because the Examiner alleges that “the specification, while being enabling for the claimed methods, plant cells, and plants wherein the artificial polynucleotide encodes the same amino acid sequence as the known polynucleotide or wherein the artificial and known polynucleotides encode an EPSPS, does not reasonably provide enablement for the claimed methods, plant cells, or plants wherein the artificial and known polynucleotides encode proteins that are not identical, or plant cells or plants comprising SEQ ID NOS:26 and/or 27 but not SEQ ID NO:18.” In addition, the Examiner states that the claims encompass any type of proteins and that “undue experimentation would be required for one skilled in the art to determine how any given protein maybe changed without affecting its functional activity.”

In view of the current amendments to claims 1, 10, and 29 to pertain to SEQ ID NO:18 and the cancellation of claims 2-5, 12, 13, 18, 30, and 31, this rejection is rendered moot. Applicants have clearly enabled claims 1, 10, and 29 as they pertain to SEQ ID NO:18.

Response To Rejection Of Claims 1-4, 10, 11, 16, 23, And 29 Under 35 U.S.C. § 102(b)

Claims 1-4, 10, 11, 16, 23, and 29 are rejected under 35 U.S.C. § 102(b), as being anticipated by Drake *et al.* (WO 97/46690), entitled “Enhancement of Gene Expression.” According to the Examiner, Drake *et al.* teach the tomato nucleotide sequence, TOM5, encoding the phytoene synthase gene, and a modified form of TOM5, MTOM5 having 63% sequence

identity and do not contain any lengths of more than 23 nucleotides having 100% identity. Also according to the Examiner, Drake *et al.* teach a “method to enhance expression of a selected protein in a plant having a gene that produces that protein, by transforming it with a nucleotide sequence that encodes the same protein but wherein the nucleotide sequence differs from that of the gene already present in the plant.”

In view of the current amendment to claims 1, 10, and 29 to pertain to SEQ ID NO:18 or SEQ ID NOS:26 and 27 and the cancellation of claims 2-4, 16, and 23, this rejection is rendered moot. Drake *et al.* does not teach SEQ ID NOS:18, 26, or 27 or a method to reduce transgene silencing employing SEQ ID NO:18. Withdrawal of the rejection of claims 1, 10, 11, and 29 under § 102(b) is respectfully requested.

Response To Rejection Of Claims 16 And 23 Under 35 U.S.C. § 102(b)

Claims 16 and 23 are rejected under 35 U.S.C. § 102(b), as being anticipated by *New England Biolabs 96/97 Catalog* (1996) (reference U), page 111. In view of the cancellation of claims 16 and 23, this rejection is rendered moot.

Response To Rejection Of Claims 16, 17, And 23 Under 35 U.S.C. § 102(b)

Claims 16, 17, and 23 are rejected under 35 U.S.C. § 102(b), as being anticipated by Fujiyama *et al.* [GenBank Accession No. AG057893 (2001)] (reference W). In view of the cancellation of claims 16, 17, and 23, this rejection is rendered moot.

Response To Rejection Of Claims 1-5, 10-13, 16, 23, And 29-32 35 U.S.C. § 103(a)

The Examiner rejects claims 1-5, 10-13, 16, 23, and 29-32 under 35 U.S.C. § 102(b), as being unpatentable over Drake *et al.* (WO 97/46690), in combination with Warner *et al.* (WO 02/26995) and Thomas *et al.* [Carole L. Thomas, Size constraints for targeting post-transcriptional gene silencing and for RNA-directed methylation in *Nicotiana benthamiana* using a potato virus X vector, *The Plant Journal* 25(4):417-425 (2001)]. According to the Examiner, it would have been obvious to use the method of Drake *et al.* to enhance the expression of the EPSPS-encoding nucleotide sequence of Warner *et al.*, while taking into account the teachings of Thomas *et al.* that the minimum size of a nucleotide sequence causing post-transcriptional gene silencing is 23 nucleotides. Applicants respectfully disagree.

Regarding rejections under 35 U.S.C. § 103(a), one of the requirements to establish a *prima facie* case of obviousness is that the prior art reference (or references when combined) must teach or suggest all the claim limitations. In view of the current amendments, claims 1, 10, and 29 pertain to SEQ ID NO:18. The combined teachings of Drake *et al.*, Warner *et al.*, and Thomas *et al.* do not teach a method of gene silencing that employs SEQ ID NO:18, a CP4 EPSPS sequence modified using the *Zea mays* codon usage. Therefore, Applicants respectfully request that the rejection of claims 1, 10, and 29 under § 103(a) be withdrawn.

Claim Rejoinder


Applicants gratefully acknowledge the Examiner's statement in the office action of March 18, 2008 that claims 17, 18, 24, and 28-33 will be rejoined with Group I and will be examined only to the extent that they read on SEQ ID NO:18 or SEQ ID NOS:26 and 27, which are sequences within SEQ ID NO:18. In view of the current claim amendments, Applicants

request the rejoinder of claims 24 and 29. As stated earlier, claims 17, 18, 28, and 30-33 are canceled.

Fees

A request for a one-month extension of time and the authorization for the associated fee are filed concurrently with this paper. Should any additional fees under 37 C.F.R. §§ 1.16-1.21 be required for any reason relating to the enclosed materials, the Commissioner is hereby authorized to deduct any additional fees from Howrey LLP Deposit Account 08-3038/11899.0235.PCUS00.

Respectfully submitted,



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